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Appeal Brief - Patents	10/713,178

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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In re application of: Martin C. BAKER et al.

Group Art Unit: 1725

AUG 22 2006

Serial No.: 10/713,178

Examiner: S. M. Heinrich

Filed: November 13, 2003

Confirmation No.: 9815

For: HAND-HELD LASER WELDING WAND REFLECTION SHIELD

Docket No.: H0005434-3174

Customer No.: 000128

RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Notification of Non-Compliant Appeal Brief ("Notification") mailed August 3, 2006, Appellant hereby submits a complete new Appeal Brief in compliance with 37 C.F.R. § 41.37. The new brief submitted herewith now more precisely points out that which was readily apparent in the originally-filed Appeal Brief, and which was allegedly non-compliant. In particular, the new brief more precisely indicates page and line numbers rather than paragraph numbers, and more clearly indicates to which independent claims the summarized matter refers.

In view of the foregoing, it is submitted that the Appeal Brief submitted herewith in response to the above-noted Notification, while not being compliant with an arbitrary requirement supplied in the Notification, is fully compliant with the clear and

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unmistakable language of 37 C.F.R. § 41.37(c)(1)(v), and should therefore be accepted without further delay.

Dated

8/22/06

Ingrassia, Fisher & Lorenz
Customer No. 29,906

Respectfully submitted,

Paul D. Amrozowicz
Registration No. 45,264

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

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In re application of: Martin C. BAKER et al.

Group Art Unit: 1725

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15 Filed: November 13, 2003

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APPEAL BRIEF PURSUANT TO 37 C.F.R. § 41.37

30

Appellant hereby submits its revised Appeal Brief in response to the final rejection of the subject patent application, and further in response to the Notification of Non-Compliant Appeal Brief.

TABLE OF CONTENTS

	I.	INTRODUCTION.....	1
	II.	REAL PARTY IN INTEREST.....	1
	III.	RELATED APPEALS AND INTERFERENCES	1
5	IV.	STATUS OF CLAIMS	1
	V.	STATUS OF AMENDMENTS.....	1
	VI.	SUMMARY OF CLAIMED SUBJECT MATTER.....	2
	VII.	GROUND OF REJECTION TO BE REVIEWED ON APPEAL	3
	VIII.	ARGUMENTS.....	3
10	IX.	CONCLUSION OF ARGUMENTS.....	11
	X.	CLAIMS APPENDIX.....	12
	XI.	EVIDENCE APPENDIX.....	17
	XII.	RELATED PROCEEDINGS APPENDIX.....	18

I. Introduction

This is an Appeal Brief under 37 C.F.R. § 41.37 appealing the final rejection of the Examiner dated February 7, 2006. Each of the topics required by 37 C.F.R. § 41.37 is presented in this Brief and is labeled appropriately.

5

II. Real Party in Interest

Honeywell International, Inc. ("Honeywell") is the real party in interest of the present application. An assignment of all rights in the present application to Honeywell was executed by the inventors and recorded by the U.S. Patent and Trademark Office at Reel 014706, Frame 0109.

10

III. Related Appeals and Interferences

There are no appeals or interferences related to the present application of which Appellant is aware.

15

IV. Status of Claims

Claims 1-17 and 19-26, which are presented in the Claims Appendix, stand finally rejected. Accordingly, the Appellant hereby appeals the final rejection of Claims 1-17 and 19-26.

20

26.

V. Status of Amendments

In response to a final Office action dated February 7, 2006, which rejected 1-17 and 19-26, Appellant filed a Response Pursuant to 37 C.F.F. § 1.116, requesting reconsideration of the rejections. In response to this request, the Examiner issued an Advisory Action, indicating that the response allegedly did not place the application in condition for allowance.

25

VI. Summary of Claimed Subject Matter

The present invention defined by independent Claim 1 relates to a hand-held laser fusion welding assembly for treating a workpiece that includes a main body (102), a nozzle (104), and a laser reflection shield (150) (FIGS. 1-5). The main body (102) is dimensioned to be grasped by a hand and is adapted to couple to at least a laser delivery system (pg. 3, ll. 20-29; FIGS. 1-5). The nozzle (104) is coupled to the main body (102) and has an aperture (210) through which laser light from the laser delivery system may pass (pg. 6, ll. 9-19; FIGS. 2, 4, 5). The laser reflection shield (150) is coupled to, and at least partially surrounds, either the nozzle (104) or the main body (102) (pg. 9, ll. 10-18; FIGS. 1-5). The laser reflection shield (150) is constructed at least partially of a material that reflects at least a portion of the laser light that passes through the nozzle aperture (210) and is reflected by the workpiece, and is configured such that no section thereof surrounds any portion of the laser light once the laser light passes through the aperture (pg. 10, ll. 24-30).

The present invention as defined by independent Claim 15 also relates to a laser reflection shield (150) for reflecting laser light that includes a clamp (602) and a shield plate (604). The clamp (602) is adapted to mount on a hand-held laser welding wand, has at least a front side (606) and a back side (608), and is selectable from a plurality of differently shaped clamps (pg. 9, l. 20 through pg. 10, 6; FIGS. 6-8). The shield plate (604) is coupled to the clamp front side (608), is constructed at least partially of a material that reflects at least a portion of the laser light, and is selectable from a plurality of shield plates (pg. 9, l. 20 through pg. 10, 6; FIGS. 6-8).

The present invention as defined by independent Claim 26 also relates to a hand-held laser fusion welding assembly for treating a workpiece that includes a main body (102), a nozzle (104), a laser reflection shield (150), and one or more proximity sensors (902). The main body (102) is dimensioned to be grasped by a hand and is adapted to couple to at least a laser delivery system (pg. 3, ll. 20-29; FIGS. 1-5). The nozzle (104) is coupled to the main body (102) and has an aperture (210) through which laser light from the laser delivery system may pass (pg. 6, ll. 9-19; FIGS. 2, 4, 5). The laser reflection shield (150) is coupled to, and at least partially surrounds, either the nozzle (104) or the main body (102) (pg. 9, ll. 10-18; FIGS. 1-5). The laser reflection shield (150) is constructed at least partially of a material that reflects at least a portion of the

laser light that passes through the nozzle aperture (210) and is reflected by the workpiece (ll. 24-30). The one or more proximity sensors (902) are coupled to the laser reflection shield (150), are each configured to sense a proximity of the laser reflection shield (150) to the workpiece and are each operable, in response thereto, to supply proximity signals representative thereof (pg. 11, l. 22 through pg. 12, l. 21; FIGS. 9, 10).

VII. Grounds of Rejection to be Reviewed on Appeal

The grounds of rejection to be reviewed in this appeal are as follows:

1. Claims 1-4 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over JP09057482, U.S. Patent Nos. 2,074,629 (Ungar), and GB 1,334,772.

2. Claims 5-11 and 15-23 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over JP09057482, Ungar, and GB 1,334,772, as applied to independent Claims 1 and 15, and further in view of JP359087999A.

3. Claims 12-14 and 24-26 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over JP09057482, Ungar, and GB 1,334,772, as applied to independent Claims 1 and 15, and further in view of U.S. Patent No. 5,151,095 (Teeple, Jr.)

VIII. Arguments

I. CLAIMS 1-4 ARE NOT UNPATENTABLE UNDER 35 U.S.C. § 103 OVER JP09057482, UNGAR, AND GB 1,334,772.

In the final Office action, Claims 1-4 were rejected under 35 U.S.C. § 103 as allegedly being unpatentable over JP09057482, Ungar, AND GB 1,334,772. As will be explained in more detail herein below, this rejection is not tenable at least because elements recited in independent

Claim 1 are not found in the cited reference, nor are the elements even remotely suggested by any citation of record.

A. JP09057482

5 JP09057482 discloses a YAG laser torch having a nozzle, and further including a shield that completely surrounds the laser light once it passes through the nozzle.

B. GB 1,334,772

GB 1,334,772 discloses a laser device having a shield that completely surrounds the laser
10 light once it passes through the nozzle

C. Ungar

Ungar discloses an electric hand tool, such as a soldering iron, that includes a flange (3). The flange (3) is disclosed as being used to elevate an end of the tool handle (2) and to further
15 serve as a heat barrier (col. 1, ll. 46-55).

D. Analysis

It is well settled that the Examiner bears the initial burden of establishing a *prima facie*
20 case of obviousness. In re Fine, 837 F.2d 1071, 1074 (Fed. Cir. 1988). The Examiner has the burden of setting forth a detailed evidentiary basis for the teaching, suggestion or motivation to combine the cited references. The factual inquiry of whether to combine references must be thorough and searching, and must be based upon objective evidence of record, In re Sang Su Lee, 277 F.3d 1338, 1343 (Fed. Cir. 2002), including the evaluation of secondary considerations.
25 Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966). Such secondary considerations include, among various other things, unexpected results.

Moreover, a claim cannot be found *prima facie* obvious unless all the elements of the claim are taught or suggested in the cited art. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974); In re Wilson, 424 F.2d 1382, 1385 (C.C.P.A. 1970) ("All words in a claim
30 must be considered in judging the patentability of that claim against the prior art."). Just because

a prior art reference *can* be modified does not render the proposed modification obvious unless the prior art suggests the desirability of making the proposed modification. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). In addition, it is well-settled that references can only be relied upon as a basis for an obviousness rejection if the references qualify as analogous art. See

5 M.P.E.P. § 2141.01(a). To qualify as analogous art, a reference must either be (1) in the field of the applicant's endeavor or, if not, (2) reasonably pertinent to the particular problem with which the inventor was concerned. In re Oetiker, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992).

Appellants submit that the Examiner has not met his burden in establishing a *prima facie*

10 case of obviousness, since the Examiner relies on a reference that does not qualify as analogous art. Moreover, even if it is assumed *arguendo* that all of the references are from an analogous art, the references do not teach or suggest all of the claim elements.

Independent Claim 1 relates to a hand-held laser fusion welding assembly for treating a workpiece that includes a hand-graspable main body, a nozzle coupled to the main body and

15 through which laser light may pass and a laser reflection shield coupled to, and at least partially surrounding, either the nozzle or the main body, and recites, *inter alia*, the laser reflection shield constructed at least partially of a material that reflects at least a portion of the laser light that passes through the nozzle aperture and is reflected by the workpiece, and configured such that no section thereof surrounds any portion of the laser light once the laser light passes through the

20 aperture.

As is readily apparent from JP09057482 and GB 1,334,772, both of these references teach providing shields that include at least sections thereof that surround portions of the laser light once the laser light passes through the device apertures. Thus, the Examiner relies on Ungar as allegedly providing this teaching.

25 Ungar, as was noted above, discloses an electric hand tool, such as a soldering iron, that includes a flange that, among other things, serves as a heat barrier. Although the flange does not surround the heat emanating piece of the tool, it is noted that the tool does not emit laser light, but merely emanates heat. Thus, it is clear that the flange is not constructed at least partially of a material that reflects at least a portion of the laser light, as is recited in independent Claim 1.

Furthermore, Ungar should not even be considered in an attempt to establish a *prima facie* case of obviousness, as it is not analogous art. In particular, it is clear that an electrical hand-held tool, such as the disclosed soldering iron, is not even remotely close to the field of endeavor of the instant claims, namely a hand-held laser welding wand. Moreover, the device disclosed in Ungar is not even remotely pertinent to the particular problem that the inventors were concerned with, namely shielding an operator from reflected laser light. A less than ordinarily skilled artisan, let alone an ordinarily skilled artisan, would not even consider looking at the field of soldering irons to try and solve the problem of protecting a laser welding operator from reflected laser light.

Nonetheless, even if the tool disclosed on Ungar was somehow believed analogous, the prior art of record in the instant application would suggest providing a shield that completely surrounds the emitted laser light. Specifically, JP09057482 discloses a YAG laser torch having a nozzle, and further including a shield that completely surrounds the laser light once it passes through the nozzle, and GB 1,334,772 discloses a laser device having a shield that completely surrounds the laser light once it passes through the nozzle. Furthermore, none of the other citations of record disclose, or even remotely suggest, a laser reflection shield constructed at least partially of a material that reflects at least a portion of the laser light that passes through the nozzle aperture and is reflected by the workpiece, and configured such that no section thereof surrounds any portion of the laser light once the laser light passes through the aperture, as is recited in independent Claim 1.

Thus, even if one were to combine the teachings of Ungar with those of either, or both, JP09057482 and GB 1,334,772, the combination would suggest providing a laser reflection shield on a hand-held laser device that completely surrounds the laser light once it passes through the nozzle.

Finally, in the final Office action, the Examiner alleges that the above line of argument is somehow directed against each of the references individually. This, of course, is simply a fallacious response. In order to refute a clearly erroneous combination of references, each must first be analyzed individually. Then, based on this individual analysis, the clear suggestion of what the individual teachings, when combined together, would result in is then provided. As noted above, based on the individual teachings of each reference, the combination would suggest

a laser reflection shield on a hand-held tool that completely surrounds the laser light once it passes through the nozzle.

In view of the foregoing, Appellant submits that independent Claims 1-4 and 15-17 are not obvious in view of JP09057482, Ungar, AND GB 1,334,772. Moreover, because
5 independent Claim 1 is nonobvious, then dependent Claims 2-4 are also nonobvious. In re Fine, supra.

10 II. CLAIMS 5-11 AND 15-23 ARE NOT UNPATENTABLE UNDER 35
U.S.C. § 103 JP09057482, UNGAR, GB 1,334,772, AND JP359087999A

In the final Office action, Claims 5-11 and 15-23 were rejected under 35 U.S.C. § 103 as allegedly being unpatentable over JP09057482, Ungar, and GB 1,334,772, as applied to independent Claim 1, and further in view of JP359087999. As will be explained in more detail
15 herein below, this rejection is not tenable at least because elements recited in independent Claims 1 and 15 are not found in the cited references, nor are the elements even remotely suggested by any citation of record.

20 A. JP09057482
JP09057482 was described above, and will therefore not be described further.

B. GB 1,334,772
GB 1,334,772 was described above, and will therefore not be described further.

25 C. Ungar
Ungar was described above, and will therefore not be described further.

D. JP359087999A

JP359087999A discloses an automatic circumferential welding machine and, more specifically, a gas shielding chamber (12) for the machine. This reference further discloses replaceable shielding plates (12c) disposed on both sides of the chamber (12).

5 E. Analysis

Independent Claim 15 relates to a laser reflection shield for reflecting laser light that includes a clamp adapted to mount on a hand-held laser welding wand and a shield plate coupled to the clamp and recites, *inter alia*, the clamp having at least a front side and a back side and selectable from a plurality of differently shaped clamps, and the shield plate constructed at least
10 partially of a material that reflects at least a portion of the laser light and selectable from a plurality of shields.

Appellant agrees that JP359087999A discloses replaceable shields. However, the disclosed shields (12c) form part of a gas shielding chamber 12, and are not disclosed as being useful for shielding of laser light. Moreover, Appellant submits that this citation, along with all
15 the other citations of record, fails to disclose a clamp that is selectable from a plurality of differently shaped clamps, and that the shield plate is selectable from a plurality of shields, as is recited in independent Claim 15. Indeed, the recitation of the clamp being selected from a plurality of different shaped clamps is not even addressed in the final Office action.

In the final Office action the Examiner contends that just because the relied upon
20 reference discloses only one size of a clamp this is not a problem because “[c]lamps are very well known and claim selection based on shape is well known and selections of clamps are available in most hardware stores.” Final Office action at 3. The Office action further alleges that the use of replaceable shields would be obvious because it is old and well-known. *Id.* In response to the allegation that the use of replaceable shields is old and well-known, Appellant
25 demanded evidence, and in the Advisory Action the Examiner provided a list of various patents that he alleges provides such evidence. The listing of patents included U.S. Patent Nos. 5,430,816 (*Furuva et al.*), 6,437,286 (*Scott*), and 6,440,219 (*Nguyen*). See Advisory Action at 2. Unfortunately, as will now be explained, these references do not disclose, or even remotely suggest, providing replaceable shields selectable from a plurality of shields and constructed at

least partially of a material that reflects at least a portion of laser light, let alone that the shields are coupled to a clamp that is selectable from a plurality of differently shaped clamps.

The Examiner alleges that Furuva et al. discloses replaceable shields in FIG. 24. The disclosed shields, however, are transparent to laser light and do not reflect at least a portion thereof. The replaceable shield disclosed in Scott is in the form of a fixed bed that covers the machine base in the cutting area and collects scrap and slag resulting from machining (col. 3, ll. 23-25). While the shields are certainly replaceable, it is unclear whether the shields reflect at least a portion of laser light. Nonetheless, even if the shields do reflect laser light, there is no disclosure or suggestion that the shields are coupled to a clamp that is selectable from a plurality of differently shaped clamps. As regards Nguyen, this reference discloses a replaceable shield that shields a portion of a workpiece during processing (Abstract). Hence, it is further clear that the shields disclosed in Nguyen do not reflect laser light. Moreover, there is no disclosure or suggestion that the shields are coupled to a clamp that is selectable from a plurality of differently shaped clamps.

In view of the foregoing, Appellant submits that independent Claim 15 is not obvious in view of JP09057482, Ungar, and GB 1,334,772, or any of the other cited references, and that, therefore, dependent Claims 16-23 and are also nonobvious. In re Fine, supra. The allowability of dependent Claims 5-11 is based at least on the allowability of independent Claim 1.

III. CLAIMS 12-14 AND 24-26 ARE NOT UNPATENTABLE UNDER 35 U.S.C. § 103 OVER JP09057482, UNGAR, GB 1,334,772, AND TEEPLER, JR.

The final Office action of February 7, 2006, also rejected Claims 12-14 and 24-26 under 35 U.S.C. § 103 as being unpatentable over JP09057482, Ungar, GB 1,334,772, and Teeple, Jr. As will be explained in more detail herein below, this rejection is not tenable at least because elements recited in independent Claim 26, and in the dependent Claims 12-14, 24, and 25, are not disclosed or suggested in any of the cited references.

A. JP09057482

JP09057482 was described above, and will therefore not be described further.

B. GB 1,334,772

5 GB 1,334,772 was described above, and will therefore not be described further.

C. Ungar

Ungar was described above, and will therefore not be described further.

10 D. Tepple, Jr.

Tepple, Jr. discloses a shield (10) that includes an insulating layer (13) having resistive properties that change when exposed to laser radiation, and that can be detected by an alarm device (25). Thus, Tepple, Jr. merely teaches providing some type of sensing device within a shield that will provide a signal indicating that the shield is being exposed to laser radiation.

15

C. Analysis

It is a basic tenet of patent law that a proposed modification or combination that changes the principle of operation of the prior art device being modified is insufficient to establish *prima facie* obviousness. In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). It is additionally
20 very well-settled that just because one or more references can be combined or modified does not render proposed modification obvious unless the prior art also suggests the desirability of the modification. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

Dependent Claims 12 and 24, and independent Claim 26 each recite, *inter alia*, one or more proximity sensors coupled to the laser reflection shield, each proximity sensor configured
25 to sense a proximity of the laser reflection shield to the workpiece and operable, in response thereto, to supply proximity signals representative thereof. In the final Office action, the Examiner alleges that Tepple, Jr. discloses “well known sensor means in a shield,” and that “the use of well known sensors in any shield would have been obvious to provide feedback to the user for improving a work task.” Final Office action at 3. However, as noted above, Tepple, Jr.
30 merely teaches providing some type of sensing device within a shield that will provide a signal

indicating that the shield is being exposed to laser radiation. Nowhere does Tepple, Jr. disclose, or even remotely suggest, at least one or more proximity sensors coupled to the laser reflection shield, each proximity sensor configured to sense a proximity of the laser reflection shield to the workpiece and operable, in response thereto, to supply proximity signals representative thereof, as recited in dependent Claims 12 and 24, and independent Claim 26.

Indeed, using proximity sensors, and the functions implemented thereby, is not even remotely close or suggestive of the principle on which the device of Tepple, Jr. operates. Thus, modifying the disclosed device would completely change the principle of operation of the device, which is clearly inapposite to obviousness. Moreover, there is clearly no suggestion whatsoever of the desirability of modification proposed by the Examiner.

In view of the foregoing, dependent Claims 12-14, 24, and 25 and independent Claim 26 are nonobvious.

IX. CONCLUSION OF ARGUMENTS

In view of the foregoing, Appellant submits that the final rejection of Claims 1-17 and 19-26 is improper and should not be sustained. Therefore, a reversal of the rejections in the final Office action dated February 7, 2006, is respectfully requested.

Respectfully submitted,

Dated

8/22/06

Paul D. Amrozowicz
Registration No. 45,264

Ingrassia, Fisher & Lorenz
Customer No. 29,906

X. CLAIMS APPENDIX

Claims on Appeal

5 1. A hand-held laser fusion welding assembly for treating a workpiece, comprising:
a main body dimensioned to be grasped by a hand and adapted to couple to at least a laser
delivery system;

a nozzle coupled to the main body and having an aperture through which laser light from
the laser delivery system may pass; and

10 a laser reflection shield coupled to, and at least partially surrounding, either the nozzle or
the main body, the laser reflection shield constructed at least partially of a material that reflects
at least a portion of the laser light that passes through the nozzle aperture and is reflected by the
workpiece, and configured such that no section thereof surrounds any portion of the laser light
once the laser light passes through the aperture.

15

2. The assembly of Claim 1, wherein the laser reflection shield is configured to be
movable on, and removable from, the main body and nozzle.

3. The assembly of Claim 1, wherein:

20 the reflected laser light is characterized by at least a wavelength; and
the material of which the laser reflection shield is at least partially constructed has low
absorption characteristics at the reflected laser light wavelength.

4. The assembly of Claim 1, wherein the laser reflection shield is configured and
25 constructed to diffusely reflect the laser light reflected by the workpiece.

5. The assembly of Claim 1, wherein the laser reflection shield comprises:
a clamp having at least a front side and a back side; and
a shield plate coupled to clamp front side.

30

6. The assembly of Claim 5, further comprising:

a plurality of clamps from which the clamp is selected; and
a plurality of shield plates from which the shield plate that is coupled to the clamp front side is selected.

5 7. The assembly of Claim 5, wherein:
the clamp front side has a recess formed therein; and
the shield plate is disposed at least partially within the recess.

10 8. The assembly of Claim 5, wherein the clamp is an annulus having an inner
peripheral surface and an outer peripheral surface, each peripheral surface disposed between the
clamp front and back sides.

15 9. The assembly of Claim 8, wherein the annulus includes a first end and a second
end disposed adjacent one another, and wherein the clamp further comprises:
an adjustable fastener coupled to the clamp, the adjustable fastener configured to move
the first and second ends relative to one another.

20 10. The assembly of Claim 9, wherein the adjustable fastener comprises a threaded
fastener that extends through the annulus outer peripheral surface, through the annulus first end,
and at least partially into the second end.

25 11. The assembly of Claim 5, further comprising:
a plurality of threaded openings formed in the clamp front side;
a plurality of openings extending through the shield plate, each shield plate opening
collocated with one of the threaded openings; and
a plurality of threaded fasteners, each fastener extending through one of the shield plate
openings and into one of the threaded openings.

12. The assembly of Claim 1, further comprising:

one or more proximity sensors coupled to the laser reflection shield, each proximity sensor configured to sense a proximity of the laser reflection shield to the workpiece and operable, in response thereto, to supply proximity signals representative thereof.

5 13. The assembly of Claim 12, further comprising:
one or more sensor apertures formed through the reflection shield,
wherein each proximity sensor is mounted proximate one of the reflections shield sensor apertures.

10 14. The assembly of Claim 12, further comprising:
a control circuit coupled between each proximity sensor and the laser delivery system, the control circuit coupled to receive proximity signals and operable, in response thereto, to selectively allow or prevent laser light delivery from the laser delivery system.

15 15. A laser reflection shield for reflecting laser light, comprising:
a clamp adapted to mount on a hand-held laser welding wand, the clamp having at least a front side and a back side and selectable from a plurality of differently shaped clamps; and
a shield plate coupled to the clamp front side, the shield plate constructed at least partially of a material that reflects at least a portion of the laser light and selectable from a plurality of
20 shield plates.

 16. The shield of Claim 15, wherein:
the laser light is characterized by at least a wavelength; and
the material of which the shield plate is at least partially constructed has low absorption
25 characteristics at the laser light wavelength.

 17. The shield of Claim 15, wherein the shield plate is configured and constructed to diffusely reflect the laser light.

30 19. The shield of Claim 15, wherein:

the clamp front side has a recess formed therein; and
the shield plate is disposed at least partially within the recess.

20. The shield of Claim 19, wherein the clamp is an annulus having an inner
5 peripheral surface and an outer peripheral surface, each peripheral surface disposed between the
clamp front and back sides.

21. The shield of Claim 20, wherein the annulus includes a first end and a second end
10 disposed adjacent one another, and wherein the clamp further comprises:
an adjustable fastener coupled to the clamp, the adjustable fastener configured to move
the first and second ends relative to one another.

22. The shield of Claim 21, wherein the adjustable fastener comprises a threaded
15 fastener that extends through the annulus outer peripheral surface, through the annulus first end,
and at least partially into the second end.

23. The shield of Claim 15, further comprising:
a plurality of threaded openings formed in the clamp front side;
20 a plurality of openings extending through the shield plate, each shield plate opening
collocated with one of the threaded openings; and
a plurality of threaded fasteners, each fastener extending through one of the shield plate
openings and into one of the threaded openings.

24. The shield of Claim 15, further comprising:
25 one or more proximity sensors coupled to the laser reflection shield, each proximity
sensor configured to sense a proximity of the laser reflection shield to a workpiece and operable,
in response thereto, to supply proximity signals representative thereof.

30 25. The shield of Claim 24, further comprising:

one or more sensor apertures formed through the reflection shield,
wherein each proximity sensor is mounted proximate one of the reflections shield sensor
apertures.

5 26. A hand-held laser fusion welding assembly for treating a workpiece, comprising:
a main body dimensioned to be grasped by a hand and adapted to couple to at least a laser
delivery system;

a nozzle coupled to the main body and having an aperture through which laser light from
the laser delivery system may pass;

10 a laser reflection shield coupled to, and at least partially surrounding, either the nozzle or
the main body, the laser reflection shield constructed at least partially of a material that reflects
at least a portion of the laser light that passes through the nozzle aperture and is reflected by the
workpiece; and

 one or more proximity sensors coupled to the laser reflection shield, each proximity
15 sensor configured to sense a proximity of the laser reflection shield to the workpiece and
operable, in response thereto, to supply proximity signals representative thereof.

XI. EVIDENCE APPENDIX

No evidence pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132 has been entered by the Examiner or relied upon by Appellant in the instant appeal beyond that which is already contained in the as-filed application, as is delineated in the Arguments section of this Brief.

XII. RELATED PROCEEDINGS APPENDIX

As there are no related appeals and interferences, there are also no decisions rendered by a court or the Board of Patent Appeals and Interferences that are related to the instant appeal.

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